

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-67. (canceled)

68. (currently amended) A cleaning robot adapted to move in a swimming pool or the like in accordance with commands from a main controller therein, the robot when in use being free of any cables connected to an external power supply, and having:

- (a) a body unit with a battery power pack, adapted to move along the floor and/or walls of ~~said the~~ the pool;
- (b) a tail unit comprising a head portion adapted to float on the surface of the ~~the~~ [[a]] pool while the body unit is on the floor of the pool, the head portion comprising ~~and~~ a connector designed for facilitating charging batteries or battery in ~~said the~~ the battery power pack by an external charger; and
- (c) a tethering cable attached at least in use, to the body unit, ~~said the~~ the tethering cable being of sufficient length to allow ~~the float of said the~~ the head portion to float on the surface of the pool while the body unit is on the floor of the pool.

69. (currently amended) [[A]] The cleaning robot according to claim 68, wherein the head portion is adapted to submerge below the water surface upon encountering an obstacle.

70. (currently amended) [[A]] The cleaning robot according to claim 68, wherein the head portion is of a geometry which minimizes the likelihood of entanglement thereof with obstacles.

71. (currently amended) [[A]] The cleaning robot according to claim 68, the robot being adapted to stop at a predetermined location when a predetermined number of wall encounters occur after the battery voltage drops below a predetermined amount.

72. (currently amended) [[A]] The cleaning robot according to claim 68, wherein the head portion comprises a float user interface, and is designed such that the float user interface is disposed at or near the surface of the pool, when the tail unit is in its working position.

73. (currently amended) [[A]] The cleaning robot according to claim 72, wherein said the tail unit further comprises a tail unit controller in communication with the main controller.

74. (currently amended) [[A]] The cleaning robot according to claim 72, wherein the float user interface is adapted to receive user input.

75. (currently amended) [[A]] The cleaning robot according to claim 68, wherein said the tail unit further comprises at least one data presentation device.

76. (currently amended) [[A]] The cleaning robot according to claim 68, further comprising an external battery charger, which is connectable to the tail unit for charging at least one battery in said the battery power pack in the body unit of the robot.

77. (currently amended) [[A]] The cleaning robot according to claim 76, wherein the charger is adapted to communicate with the tail unit via a cable, and wherein another cable is used for connecting the tail unit with said the battery power pack.

78. (currently amended) [[A]] The cleaning robot according to claim 76, wherein the charger comprises at least one charger-side data presentation [[units]] unit.

79. (currently amended) [[A]] The cleaning robot according to claim 68, the robot having a memory adapted to store a certain orientation of the robot in relation to a fixed direction, ~~said the~~ controller being adapted to provide the robot with a command to align its orientation in accordance with the stored orientation.

80. (currently amended) [[A]] The cleaning robot according to claim 79, wherein ~~said the stored~~ orientation is defined by the robot's initial orientation.

81. (currently amended) [[A]] The cleaning robot according to claim 79, further comprising a detector for detecting a wall when impacted by the robot, wherein the alignment of the robot's orientation is performed after at least one wall detection.

82. (currently amended) [[A]] The cleaning robot according to claim 81; the robot further comprising an electro-mechanical drive means[[:]], ~~said the~~ first controller being adapted to detect the current through the drive means, whereby when the current exceeds a threshold, the controller assumes a wall impact to have occurred.

83. (currently amended) [[A]] The cleaning robot as disclosed in claim 82, wherein the threshold is determined by multiplying an average of the current passing through the drive means during one or more traversings of the pool floor by a constant.

84. (currently amended) [[A]] The cleaning robot according to claim 80, wherein the controller is adapted to allow the robot to perform a straight lap and a subsequent stepped lap, each between two wall detections, both laps comprising ~~said the~~ alignment, the stepped lap also including rotation of the robot through a predetermined angle relative to its orientation during the straight lap, whereby the robot is adapted to move along two known mutually angled directions independently of the shape of the ~~walls of the~~ swimming pool.

85. (currently amended) ~~[[A]]~~ The cleaning robot according to claim 84, wherein ~~said~~ the predetermined angle is 90 degrees.

86. (currently amended) ~~[[A]]~~ The cleaning robot according to claim 84, wherein during the stepped lap, the robot moves for a period constituting a predetermined portion of the duration of the preceding straight lap, ~~said~~ the portion being increased after a predetermined number of wall detections.

87. (currently amended) ~~[[A]]~~ The cleaning robot according to claim 68, adapted to move in a swimming pool or the like, wherein the robot is preprogrammed for performing a plurality of cleaning modes, of which at least two are selected from ~~[[a]]~~ the group ~~comprising~~ consisting of:

- (a) the robot scanning the floor surface of the pool, and ascending a sidewall at predetermined time intervals;
- (b) the robot having a decreased speed and an increased suction; and
- (c) the robot executing a cycle comprising ascending a sidewall to the waterline, cleaning the waterline for a predetermined amount of time in a first direction with relation to the pool, descending the sidewall to the floor, moving along the sidewall a predetermined distance in a second direction which is opposite the first direction, ascending the sidewall, and continuing cleaning in the first direction.

88. (currently amended) ~~[[A]]~~ The cleaning robot adapted to move in a swimming pool or the like, adapted to move in the pool along two scanning directions obtained by adjusting the orientation of the robot in a predetermined way relative to a reference orientation

thereof in relation to a fixed direction, said the scanning directions having a predetermined angle therebetween, independently of the swimming pool's shape.

89. (currently amended) [[A]] The cleaning robot according to claim 88, the robot having a memory adapted to store the orientation of the robot, and a controller being adapted to provide the robot with a command to align its orientation in accordance with the reference-stored orientation.

90. (currently amended) [[A]] The cleaning robot according to claim 89, wherein said the reference orientation is defined by the robot's initial orientation.

91. (currently amended) [[A]] The cleaning robot according to claim 88, wherein said the predetermined angle is 90 degrees.

92. (currently amended) A cleaning robot adapted to move in a swimming pool or the like in accordance with commands from a main controller therein, the robot when in use being free of any cables connected to an external power supply, and having a body unit with a battery power pack, adapted to move along the floor and/or walls of said the pool, and a tail unit comprising a head portion adapted to float on the surface of a pool, and a tethering cable attached at least in use, to the body unit; the robot comprising a means for detecting its orientation in relation to a fixed direction.

93. (currently amended) [[A]] The cleaning robot according to claim 92, wherein the means is a digital compass integrated onto the controller.